

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/093,001 06/08/98 DAVIS

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IM62/0708

EXAMINER

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10260 OLD COLUMBIA ROAD  
COLUMBIA MD 21046

OLSEN, K

ART UNIT	PAPER NUMBER
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1744

DATE MAILED:

07/08/99

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No. <b>09/093,001</b>	Applicant(s) <b>Davis et al.</b>
Examiner <b>Kaj Olsen</b>	Group Art Unit <b>1744</b>

Responsive to communication(s) filed on Jun 8, 1998

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 1 and 2 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1 and 2 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1744

## **DETAILED ACTION**

Applicant is reminded that while an inventor may prosecute the application, lack of skill in this field may act as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skillful preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

### *Specification*

1. The abstract of the disclosure is objected to because it was not provided on a separate sheet of paper. In response to this action, the applicant's should request the current abstract of disclosure be deleted and request a new abstract (provided this time on a separate sheet of paper) be added to the application. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1744

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is drawn to a means for the detection of corrosion as a function of accelerated exposure to corrosion inducing conditions. The specification teaches achieving said accelerated exposure by immersion in salt water. However, the specification is unclear as to whether this immersion step is ceased during the step of measurement the impedance. The examiner has interpreted this as being the case because lines 20-22 of claim 1 imply the surface is only wet where the water or electrolyte is applied.

The applicant's repeatedly utilizes text within parenthesis further define the claimed invention. This is indefinite because it is unclear to the examiner if the parenthetical text is part of the claimed invention. This is particularly indefinite with respect to the text beginning (i.e., ...) in both claim 1, line 6, and claim 2, line 3). With respect to claim 1, if the applicant considers the impedance magnitude and phase as a function of the frequency of the applied voltage to be their definition of an impedance spectrum, then the applicants should then directly claim so without the use of parenthesis.

In claim 1, lines 13 and 14, the lines "which may be either straight in structural configuration (in the form of a pen) or bent in a curved or angled fashion" is indefinite because (a) multiple embodiments of an invention should not be claimed within the same claim

Art Unit: 1744

(alternative embodiments should be claimed by dependent claims off of the independent claim), and (b) the drawings and specification do not provide support for embodiments of the invention where the sensor is bent, curved, or in an angled fashion. Only an embodiment where the sensor is straight and “pen-like” is disclosed in the specification.

In claim 1, lines 16, the phrase “top coat of metallic structure to be tested” is indefinite because lines 3 and 12 of the claim state the metallic structure could be uncoated. It is indefinite to have a limitation of the claim be set forth only directed to coated structures when the method is utilized for both types of surfaces. This limitation would be definite if the word “coating” were deleted.

In claim 1, line 25, the limitation “providing a potentiostat’s microcomputer” is indefinite because the claim only positively recites the presence of the microcomputer (and not the potentiostat itself) which the examiner does not believe was intended. The examiner recommends the limitation be rephrased as “providing a microcomputer controlled potentiostat” to make the claim more definite.

In claim 1, lines 25-27, although there is support for the presence of a potentiostat, there is no support in the drawings or specification of a microcomputer having an operational program for correlating distinctive impedance signatures (claim 1) or distinctive impedance spectra (claim 2). The specification only discloses how different impedance spectra visually compare with each other and give no indication said comparison would occur utilizing a program’s representation of a functional expression.

Art Unit: 1744

In claim 1, line 27, and claim 2, lines 14 and 15, the use of the phrase “means for converting the impedance spectrum as a function of accelerated exposure” is indefinite firstly because it is unclear what the accelerated exposure is. The claim would be more indefinite if the second half of the above phrase were amended to read “as a function of accelerated exposure of the metallic structure to corrosion inducing or coating degrading conditions”. Secondly, the phrase is indefinite because the examiner does not see in the specification any “conversion” of the impedance spectrum into anything else as a function of exposure, but only sees a means for “comparing” different impedance spectra (fig. 1 and 3).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Kihira et al (USP 4,806,849).

With respect to the claim as best understood, Kihara ('849) discloses an apparatus for detection of the degradation of a metallic structure under field conditions based on a measured impedance spectrum. Said apparatus comprises a means for measuring the impedance by applying an electrical voltage between the metallic substrate of the structure as a working

Art Unit: 1744

electrodes 5 and a counter or reference electrode 9 (col. 5, lines 35-37), a means for converting an analog signal indicative of a measured current to a corresponding ac impedance signal (again col. 5, lines 35-37), a means for correlating different impedance values (Table 2) (the examiner has not given any weight to the use of an operational program for the correlation as the examiner does not believe such a program has been adequately set forth in the applicant's specification), and a means for interpreting said spectrum to determine the stage of corrosion of the metal or the coating has experience (again Table 2).

Although Kihara et al does not disclose measuring the impedance spectrum as a function of accelerated exposure, that is only the intended use of the invention and the intended use of the invention need not be given further due consideration in determining the patentability of an apparatus.

#### *Allowable Subject Matter*

6. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action.
7. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose nor render obvious a method for detection of electrochemical corrosion utilizing the means set forth in claim 1 with particular attention to pressing the metal tip of the sensor against the top of the metallic structure to be tested and wetting the surface of

Art Unit: 1744

the structure with water or other electrolyte allowing the sensor to detection corrosion or coating defects away from the sensor wherever the structure is wet.

***How to file a response to this Office Action***

If Applicant wishes to continue prosecution representing himself/herself, the following is a quotation from 37 C.F.R. 1.119-1.126 and a certificate of mailing form which may prove helpful to the Applicant when filing a response.

**37 C.F.R.**

**1.119 Amendment of claims.**

The claims may be amended by canceling particular claims, by presenting new claims, or by rewriting particular claims as indicated in 1.121. The requirements of 1.111 must be complied with by pointing out the specific distinctions believed to render the claims patentable over the references in presenting arguments in support of new claims and amendments.

[ 32 FR 13583, Sept. 28, 1967 ]

**1.121 Manner of making amendments.**

(a) Erasures, additions, insertions, or alterations of the Office file of papers and records must not be physically entered by the applicant. Amendments to the application (excluding the claims) are made by filing a paper (which should conform to 1.52) directing or requesting that specified amendments be made. The exact word or words to be stricken out or

Art Unit: 1744

inserted by said amendment must be specified and the precise point indicated where the deletion or insertion is to be made.

(b) Except as otherwise provided herein, a particular claim may be amended only by directions to cancel or by rewriting such claim with underlining below the word or words added and brackets around the word or words deleted. The rewriting of a claim in this form will be construed as directing the cancellation of the original claim; however, the original claim number followed by the parenthetical word "amended" must be used for the rewritten claim. If a previously rewritten claim is rewritten, underlining and bracketing will be applied in reference to the previously rewritten claim with the parenthetical expression "twice amended," "three times amended," etc., following the original claim number.

(c) A particular claim may be amended in the manner indicated for the application in paragraph (a) of this section to the extent of corrections in spelling, punctuation, and typographical errors. Additional amendments in this manner will be admitted provided the changes are limited to (1) deletions and/or (2) the addition of no more than five words in any one claim. Any amendment submitted with instructions to amend particular claims but failing to conform to the provisions of paragraphs (b) and (c) of this section may be considered nonresponsive and treated accordingly.

(d) Where underlining or brackets are intended to appear in the printed patent or are properly part of the claimed material and not intended as symbolic of changes in the particular

Art Unit: 1744

claim, amendment by rewriting in accordance with paragraph (b) of this section shall be prohibited.

(e) In reissue applications, both the descriptive portion and the claims are to be amended by either (1) submitting a copy of a portion of the description or an entire claim with all matter to be deleted from the patent being placed between brackets and all matter to be added to the patent being underlined, or (2) indicating the exact word or words to be stricken out or inserted and the precise point where the deletion or insertion is to be made. Any word or words to be inserted must be underlined. See 1.173.

(f) Proposed amendments presented in patents involved in reexamination proceedings must be presented in the form of a full copy of the text of: (1) Each claim which is amended and (2) each paragraph of the description which is amended. Matter deleted from the patent shall be placed between brackets and matter added shall be underlined. Copies of the printed claims from the patent may be used with any additions being indicated by carets and deleted material being placed between brackets. Claims must not be renumbered and the numbering of the claims added for reexamination must follow the number of the highest numbered patent claim. No amendment may enlarge the scope of the claims of the patent. No new matter may be introduced into the patent.

[ 32 FR 13583, Sept. 28, 1967; 46 FR 29183, May 29, 1981; para. (e), 49 FR 555, Jan. 4, 1984, effective Apr. 1, 1984 ]

Art Unit: 1744

1.122 Entry and consideration of amendments.

(a) Amendments are "entered" by the Office by making the proposed deletions by drawing a line in red ink through the word or words canceled and by making the proposed substitutions or insertions in red ink, small insertions being written in at the designated place and large insertions being indicated by reference.

(b) Ordinarily all amendments presented in a paper filed while the application is open to amendment are entered and cancellation or correction being required of improper amendments. Untimely amendment papers may be refused entry and consideration in whole or in part. For amendments presented during an interference see 1.664.

[ 24 FR 10332, Dec. 22, 1959; para. (b), 49 FR 48416, Dec. 12, 1984, effective Feb. 11, 1985 ]

1.123 Amendments to the drawing.

No change in the drawing may be made except with permission of the Office. Permissible changes in the construction shown in any drawing may be made only by the submission of a substitute drawing by applicant. A sketch in permanent ink showing proposed changes, to become part of the record, must be filed for approval by the examiner and should be a separate paper.

[ 48 FR 2712, Jan. 20, 1983, effective Feb. 27, 1983; 49 FR 555, Jan. 4, 1984, effective Apr. 1, 1984; amended, 58 FR 38719, July 20, 1993, effective Oct. 1, 1993 ]

Art Unit: 1744

1.124 Amendment of amendments.

When an amendatory clause is to be amended, it should be wholly rewritten and the original insertion canceled so that no interlineations or deletions shall appear in the clause as finally presented. Matter canceled by amendment can be reinstated only by a subsequent amendment presenting the canceled matter as a new insertion.

1.125 Substitute specification.

If the number or nature of the amendments shall render it difficult to consider the case, or to arrange the papers for printing or copying, the examiner may require the entire specification, including the claims, or any part thereof, to be rewritten. A substitute specification may not be accepted unless it has been required by the examiner or unless it is clear to the examiner that acceptance of a substitute specification would facilitate processing of the application. Any substitute specification filed must be accompanied by a statement that the substitute specification includes no new matter. Such statement must be a verified statement if made by a person not registered to practice before the Office.

It is called to applicant's attention that if a communication is mailed before the response time has expired applicant may submit the response with a "Certificate of Mailing" which merely asserts that the response is being mailed on a given date. So mailed, before the period for response has lapsed, the response is considered timely. A suggested format for a certificate follows:

Art Unit: 1744

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents

Washington, D.C. 20231

on \_\_\_\_\_ (date).

Typed or printed name of person signing this certificate

\_\_\_\_\_  
Signature\_\_\_\_\_

Date \_\_\_\_\_

If Applicant believes an extension of time is needed, the following guidelines for a petition is suggested:

'The applicant herewith petitions the Commissioner of Patents and Trademarks to extend the time for response to the Office action dated \_\_\_\_\_ for \_\_\_\_\_ month(s) from \_\_\_\_\_ to \_\_\_\_\_. Submitted herewith is a check for \_\_\_\_\_ to cover the cost of the extension [ Please Charge my deposit account number \_\_\_\_\_, in the amount of \_\_\_\_\_ to cover the cost of the extension. Any deficiency or overpayment should be charged or credited to the above numbered deposit account. ]'

Art Unit: 1744

The fees are as follows:

1 month=	\$55.00
2 months=	\$195.00
3 months=	\$465.00

If a time extension has been paid and another is needed, the additional amount needed is the difference between the amount paid of the recorded extension and the time extension needed.

### ***Conclusion***

8. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

### **Certificate of Mailing**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Assistant Commissioner for Patents  
Washington, D.C. 20231

on \_\_\_\_\_.  
(Date)

Typed or printed name of person signing this certificate:

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Signature: \_\_\_\_\_

### **Certificate of Transmission**

Art Unit: 1744

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703) \_\_\_\_\_ on \_\_\_\_\_.  
(Date)

Typed or printed name of person signing this certificate:

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Signature: \_\_\_\_\_

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Homma et al, Kondou et al, Murray, Diamond et al, and Davis et al.

The applicants are encouraged to either employ the services of an attorney or to contact the examiner prior to submitting a response to this office action to ensure the response will be properly submitted.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (703) 305-0506.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Robert Warden, can be reached at (703) 308-2920.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing of your papers. The fax number for this Group are (703) 305-3599 for "Official" faxes and (703) 305-7719 for "Unofficial" faxes.

Art Unit: 1744

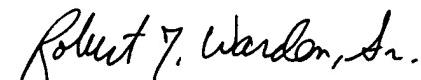
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.

Kaj K. Olsen, Ph.D.



Patent Examiner

AU 1744



ROBERT J. WARDEN, SR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700